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the electro-chemical equivalent of antimony from the chloride, that I found reasons for the statement I have made respecting the presence of water in it in an earlier part of these Researches (425, 428, etc.).

532. I endeavoured to experiment upon the oxide of lead obtained by fusion and ignition of the nitrate in a platina crucible, but found great difficulty, from the high temperature required for perfect fusion, and the powerful fluxing qualities of the substance. Green-glass tubes repeatedly failed. I at last fused the oxide in a small porcelain crucible, heated fully in a charcoal fire; and, as it was essential that the evolution of the

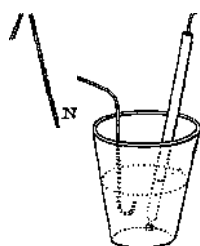


Fig. 31.

lead at the *cathode* should take place beneath the surface, the negative electrode was guarded by a green-glass tube, fused around it in such a manner as to expose only the knob of platina at the lower end (fig. 30), so that it could be plunged beneath the surface, and thus exclude contact of air or oxygen with the lead reduced there. A platina wire was employed for the positive electrode, that metal not being subject to any action from the oxygen evolved against it. The arrangement is given in fig. 31.

533. In an experiment of this kind the equivalent for the lead came out 93.17, which is very much too small. This, I believe, was because of the small interval between the positive and negative electrodes in the oxide of lead; so that it was not unlikely that some of the froth and bubbles formed by the oxygen at the *anode* should occasionally even touch the lead reduced at the *cathode*, and re-oxidise it. When I endeavoured to correct this by having more litharge,

the greater heat required